ORIGINAL

U.S. DISTRICT COURT
NORTHERN DISTRICT OF TEXAS
FILED
MAY - 1 2015
CLERK, U.S. DISTRICT COURT
By
Deputy

UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF TEXAS
FORT WORTH DIVISION

HENRY LEE SIMS, JR., *et al*

Plaintiffs,

VS.

KIA MOTORS AMERICA, INC. and KIA MOTORS CORPORATION,

Defendants.

CASE NO. 4:14-cv-00045-A

DEFENDANTS' APPENDIX IN SUPPORT OF DEFENDANTS' MOTION TO EXCLUDE THE TESTIMONY OF MICHAEL MCCORT AND BRIEF IN SUPPORT

Defendants Kia Motors America, Inc. (KMA) and Kia Motors Corporation (KMC) respectfully submit this appendix in support of its motion to exclude the testimony of Michael McCort and brief in support. This appendix contains the following materials:

EXHIBIT	DESCRIPTION	PAGE NUMBERS
Exhibit A	Plaintiffs' First Amended Complaint for Damages	3 – 19
Exhibit B	Jeff Colwell Expert Report	20 – 50
Exhibit C	Jerry Wallingford Expert Report	51 – 82
Exhibit D	Michael McCort Deposition Excerpts	83 – 86
Exhibit E	Greg Smith Expert Report Excerpt[1]	87 – 88
Exhibit F	Jerry Wallingford Deposition Excerpts	89 – 132

[1] Because Smith's expert report is 110 pages, Defendants have only included an excerpt. The full report can be made available to the Court upon request.

Respectfully submitted,

KURT C. KERN
State Bar No. 11334600
kurt.kern@bowmanandbrooke.com
CARY A. SLOBIN
State Bar No. 00797445
cary.slobin@bowmanandbrooke.com
TANYA B. SCARBROUGH
State Bar No. 24049268
tanya.scarbrough@bowmanandbrooke.com
AMANDA R. MCKINZIE
State Bar No. 24088028
amanda.mckinzie@bowmanandbrooke.com
BOWMAN AND BROOKE LLP
2501 North Harwood, Suite 1700
Dallas, Texas 75201
Telephone: (972) 616-1700
Facsimile: (972) 616-1701
COUNSEL FOR DEFENDANTS

CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing document has been forwarded to all known counsel of record in this cause in accordance with the Federal Rules of Civil Procedure on this 1st day of May, 2015.

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UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF TEXAS
FORT WORTH DIVISION

HENRY LEE SIMS, JR., *et al*	§	
	§	
Plaintiffs,	§	
	§	
VS.	§	**CASE NO. 4:14-cv-00045-A**
	§	
KIA MOTORS AMERICA, INC.,	§	
	§	
Defendant.	§	

FIRST AMENDED COMPLAINT FOR DAMAGES

TABLE OF CONTENTS

COME NOW Plaintiffs, and allege as follows:

I. INCORPORATION

1. By this reference, each paragraph contained herein is incorporated as support for each paragraph which follows.

II. PLAINTIFFS

2. Henry Lee Sims, Jr., is the natural son of Henry Lee Sims, Sr. Henry Lee Sims, Jr., is a resident of the State of Texas.

3. Timothy Everett Sims is the natural son of Henry Lee Sims, Sr. Timothy Everett Sims is a resident of the State of Texas.

4. Willie Earl Sims is the natural son of Henry Lee Sims, Sr. Willie Earl Sims is a resident of the State of Texas.

5. Shamika Renee Sims is the maternal granddaughter of Henry Lee Sims, Sr. Shamika Renee Sims is the natural daughter of Lizzie Sims, deceased. Lizzie Sims was the natural daughter of Henry Lee Sims, Sr. Shamika Renee Sims is a resident of the State of Texas.

6. Kathlyn Lenetta Sims is the natural daughter of Henry Sims, Sr. Kathlyn Lenetta Sims is a resident of the State of Texas.

7. Brence Eric Sims is the natural son of Henry Sims, Sr. Brence Eric Sims is a resident of the State of Texas.

8. Michael Andre Sims is the natural son of Henry Sims, Sr. Michael Andre Sims is a resident of the State of Texas.

9. Sarah Denise Sims is the natural daughter of Henry Sims, Sr. Sarah Denise Sims is a resident of the State of Texas.

10. Pamela Rachel Sims is the natural daughter of Henry Sims, Sr. Pamela Rachel Sims is a resident of the State of Texas.

11. When not otherwise specified, the term "Plaintiffs" shall refer to the named Plaintiffs collectively and in their capacity as legal heirs to the Estate of Henry Sims, Sr. When not otherwise specified, "Mr. Sims" shall refer to Henry Sims, Sr.

III. DEFENDANTS

12. Defendant Kia Motors America, Inc. ("KMA") is a corporation with its principal place of business located in the State of California. According to its website, KMA is "the marketing and distribution arm of Kia Motors Corporation based in Seoul, South Korea. KMA offers a complete line of vehicles through more than 755 dealers throughout the United States."

13. Service of process upon KMA may be had at 11 Peters Canyon Road, Irvine, California, 92606.

14. Defendant Kia Motors Corporation ("KMC") is a Korean corporation headquartered in Seoul, Korea. Kia Motors America is a subsidiary of KMC. At all relevant times, KMC was actively involved in designing, manufacturing, assembling, marketing, distributing, and selling Kia vehicles in California and throughout the United States.

15. Service of process upon KMC may be had at 231 Yangjae-Dong, Seocho-gu, Seoul, Republic of Korea 137-938.

IV. JURISDICTION AND VENUE

16. Jurisdiction is proper pursuant to 28 U.S.C. § 1332. There exists complete diversity between the parties and the amount in controversy exceeds $75,000.00.

17. This Court has personal jurisdiction over Defendants because a substantial portion of the wrongdoing alleged in this Amended Complaint occurred in this forum, the Defendants are authorized to do business in this forum, both KMA and KMC have intentionally availed themselves of the markets available in the State of Texas and because Defendant KMA voluntarily submitted to the jurisdiction of this Court by seeking transfer of the above-captioned action from the U.S. District Court for the Central District of California. Consequently,

Defendants have extensive contacts with the State of Texas rendering the exercise of jurisdiction by this Court permissible under traditional notions of fair play and substantial justice.

18. The Court further has jurisdiction because all Plaintiffs reside in this forum.

19. Venue is proper in this forum pursuant to 28 U.S.C. § 1391 because a substantial part of the events, acts and omissions giving rise to Plaintiffs' claims occurred herein and because Defendant KMA previously requested that this action be transferred to this forum.

20. This action was original filed in the United States District Court for the Central District of California because Defendant KMA is headquartered in the State of California and Defendant KMC has substantial contacts and operations within the State of California. Because of the substantial interest of the State of California to regulate businesses, activities and/or wrongful conduct occurring and/or emanating from within its borders, the laws of the State of California apply to Plaintiffs' claims.

V. FACTUAL ALLEGATIONS

A. The Defects in the Kia Soul's Fuel System

21. On information and belief, KMC and/or KMA undertook the design of the Kia Soul in early 2005 under the direction of Tom Kearns, its Chief Designer. The Kia Soul was designed wholly or in part at the Design Center of America in the State of California.

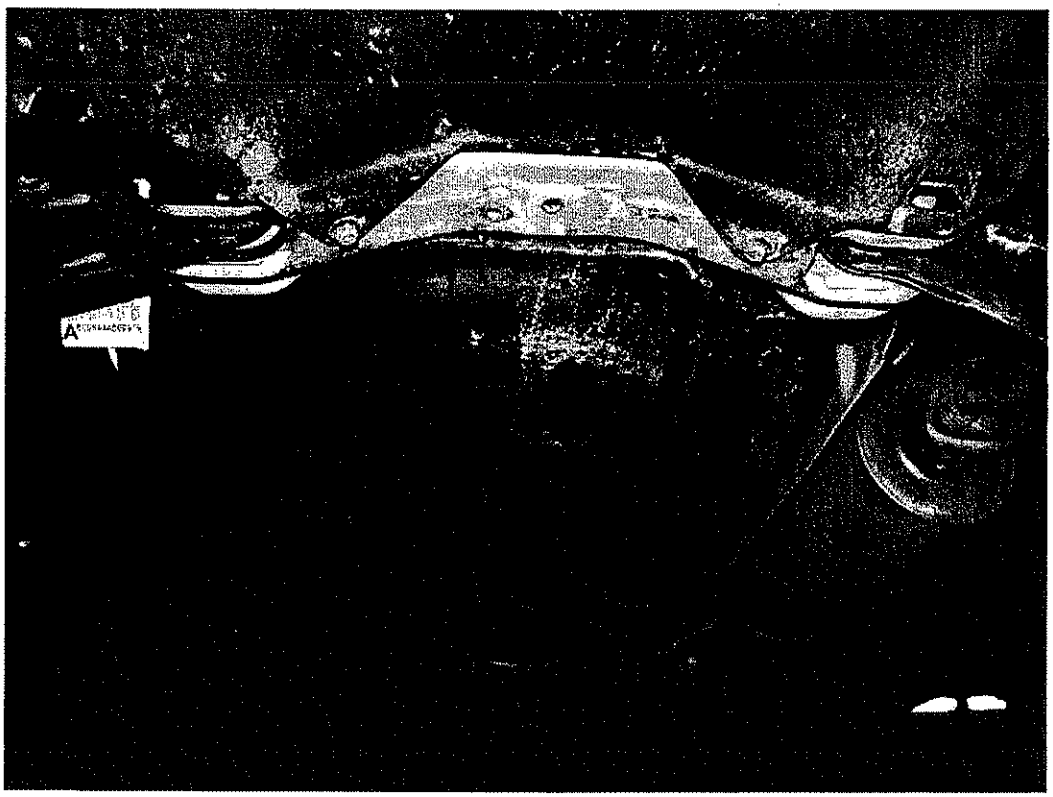
22. The Kia Soul design is characterized by several defects related to its fuel system.

23. Given the hazards posed by a vehicle's gas tank, vehicle manufacturers must take reasonable steps to design and manufacture a gas tank that is not susceptible to failure in collisions and that, if fire in the gas tank does result, the fire does not immediately explode into the passenger cabin of the vehicle so that occupants have an opportunity to escape the burning car.

24. Standard safety devices call for the fuel tank to be protected by a shield or straps. Almost all cars sold in the United States have a gas tank that is either protected by a shield or reinforcing straps.

25. A gas tank shield is made of a separate piece of sheet metal, which holds the gas tank in place and substantially improves the tank's ability to withstand puncture in an accident.

26. Reinforcing straps tie the gas tank to the frame of the vehicle and ensure that the tank will not dislodge or drop in an accident. Below is a photograph of the underside of a non-Kia vehicle (a 2006 Honda civic) that has its gas tank secured with straps:



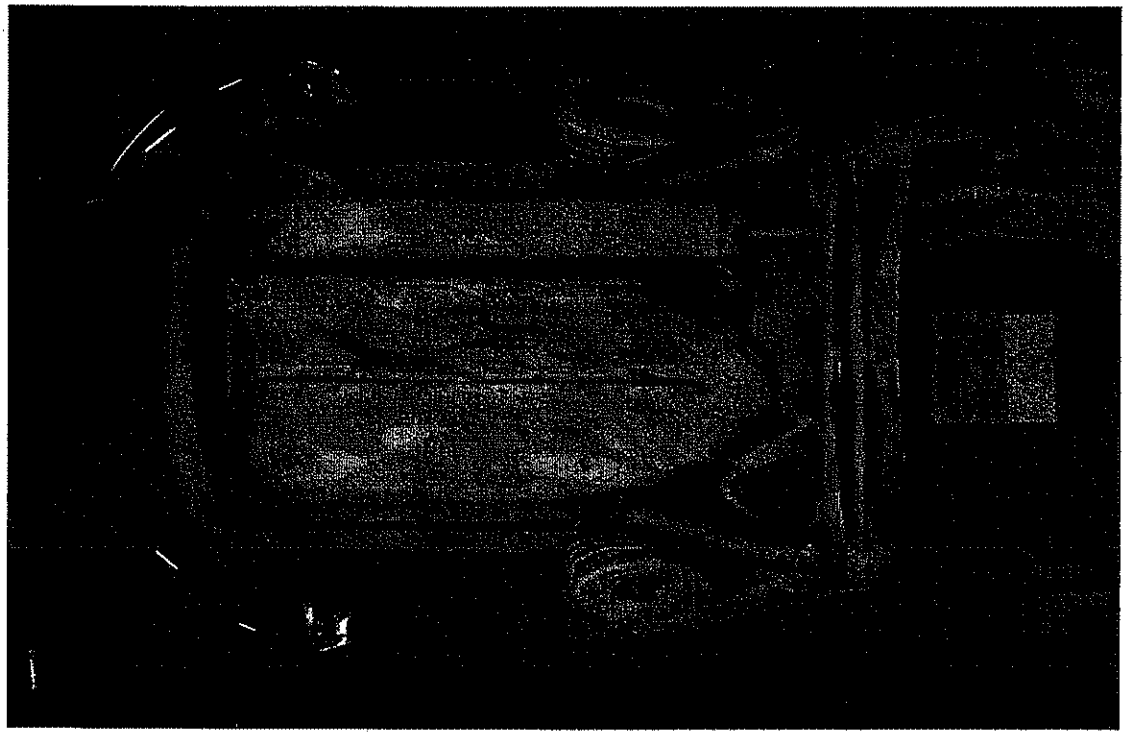
27. Failure to use a gas tank shield or reinforcing straps, as most auto manufacturers do, increases the risk that the gas tank will dislodge and ignite in a collision.

28. Other safe design and manufacturing considerations must be given to the vehicle's fuel pump. The fuel pump transmits the gas from the tank to the engine, and it must

be located in a safe place. Although not common, in some vehicle models, technicians can access the fuel pump through the passenger cabin if the fuel pump needs service. It is easier and less costly to access the fuel pump in this manner than it is to remove the fuel tank to access the pump when the fuel pump is located inside the gas tank itself. But when the fuel pump is accessible through the passenger cabin, manufacturers must ensure that the "service cover" for the fuel pump is made of metal and appropriately affixed so that a fire in a gas tank cannot quickly melt through the cover and invade the vehicle.

29. Unfortunately, Kia has not heeded the foregoing safe design and manufacturing guidelines in the Kia Soul and has, as a result, unnecessarily exposed Plaintiffs to an unreasonable risk of harm.

30. In the Kia Soul, the gas tank is located just forward of the rear axle and immediately under the rear passenger seats, as depicted in red in the following photograph of a Defective Soul:



31. Given the gas tank's location and proximity to the rear passengers, the tank must be designed and manufactured in a manner that ensures the safety of those in the car. It was not.

32. The Kia Soul fails to shield or strap the gas tank – omitting both of these crucial protections. It did so despite the fact that Kia has incorporated fuel tank straps in certain models.

33. Again, failing to use a gas tank shield or reinforcing straps increases the risk that the gas tank will dislodge and ignite in a major collision. The risk is particularly heightened in the Soul because of the gas tank's location immediately under the rear passenger seats.

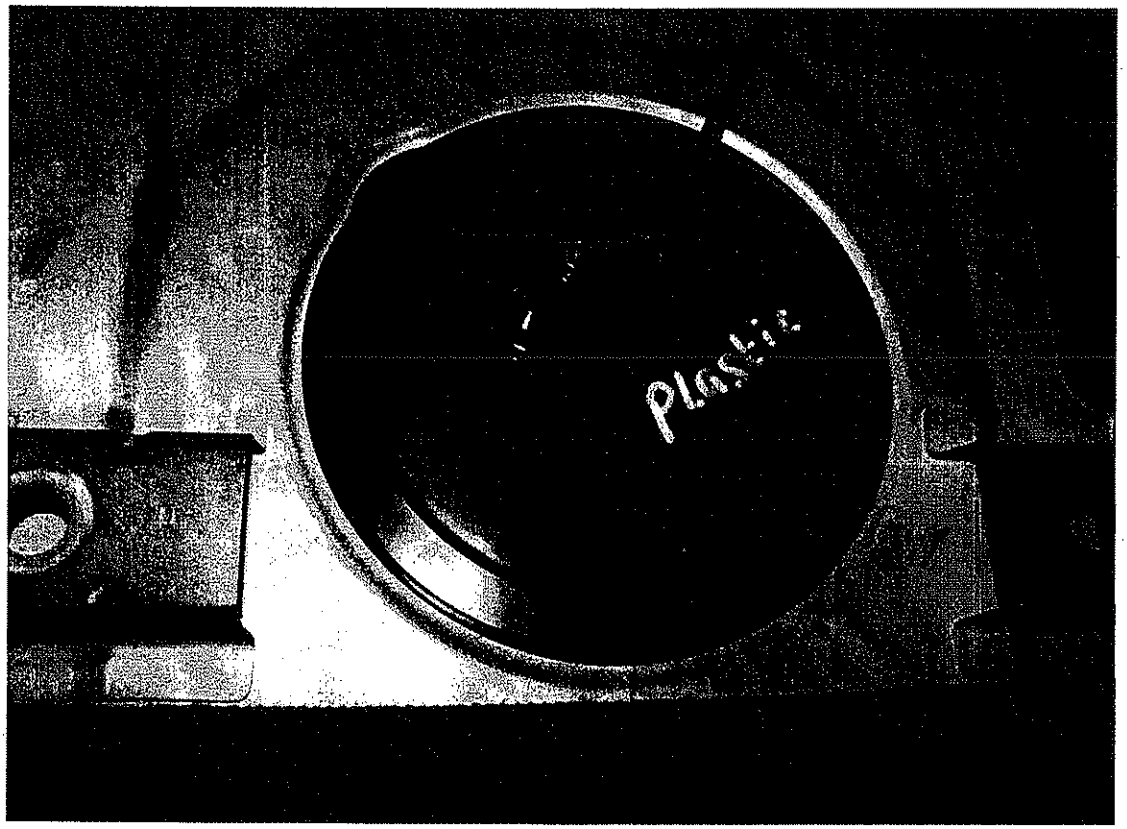
34. This is a defect and presents a significant safety risk exposing Kia Soul passengers to a risk of serious injury or death in the event of an accident.

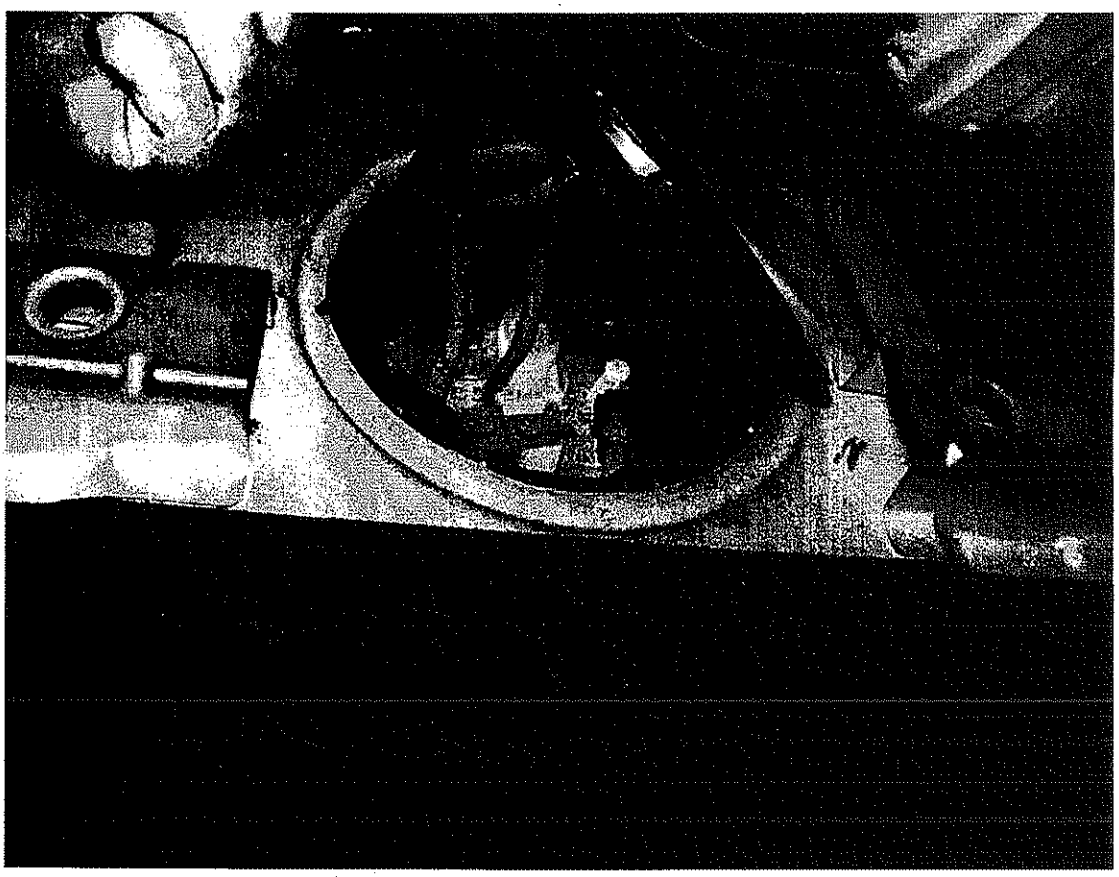
35. Kia is well aware of the need to affix the gas tank by using reinforcing straps. Kia has used straps on some of its vehicles and issued a recall in 2011 of 2003-2007 model year Spectra's in northern climates where road salt is used. As the recall notice explained:

> THERE IS A POSSIBILITY THAT CORROSION OF THE FUEL TANK STRAPS WHICH HOLD THE TANK MAY OCCUR AS A RESULT OF PROLONGED EXPOSURE TO ROAD SALT. AS A RESULT OF THE CORROSION, ONE OR BOTH STRAPS MAY SEPARATE ALLOWING THE FUEL TANK TO CONTACT THE GROUND AND POSSIBLY DISRUPT THE INTEGRITY OF THE TANK. **CONSEQUENCE**: THE FUEL TANK CAN FALL FROM THE VEHICLE AND STRIKE THE GROUND WHICH COULD CAUSE A FUEL LEAK. LEAKING FUEL CAN CREATE A FIRE HAZARD.

36. The fuel pump cover in the Kia Soul is located immediately under the rear seat cushion and is made of plastic, increasing the likelihood of a "blow-torch" fire in the rear compartment.

37. The service cover for the fuel pump is plastic and is located underneath the rear seat cushion as shown in the following photographs taken of a Defective Soul:





38. Thus, the only thing separating the rear passenger from these plastic fuel pump service covers is the seat cushion on which the passenger sits.

39. This is a highly dangerous location for a fuel pump service cover made of plastic, particularly given the other gas tank defects itemized above that already make the gas tank unreasonably dangerous. This location, coupled with the use of a plastic instead of a metal fuel pump service cover that is screwed to the floor pan of the vehicle, increases the likelihood that fire will penetrate the rear cabin in a "blow-torch" effect following a collision.

40. This is a defect and presents a significant safety risk exposing Kia Soul passengers to a risk of serious injury or death in the event of an accident.

41. Kia promoted the Soul as a "Top Safety Pick" with "advanced safety systems," with "safety awards from IIHS and NHTSA for added peace of mind."

42. A brochure/advertisement for the 2013 Soul proclaims that the Kia Soul is a "2012 Top Safety Pick Insurance Institute For Highway Safety" and that this award provided added "peace of mind."

43. Given the gas tank defects itemized above, marketing statements that the Kia Soul is safe, "world class," and has "world-class quality" are false and misleading.

44. Defendants made these representations to boost vehicle sales knowing that the gas tanks in the Soul were defective.

45. Throughout the relevant period, Defendants possessed vastly superior information to that of Plaintiffs – if not exclusive information – about the design and function of the gas tanks in the Kia Soul.

46. To date, Defendants have never disclosed the defects inherent in the Kia Soul's fuel system.

B. Plaintiffs' Injuries

47. On April 28, 2013, Henry Sims, Sr. was riding as a passenger in a 2010 Kia Soul. Mr. Sims was one of three passengers seated in the backseat of the vehicle.

48. At approximately 2:00 p.m., the vehicle was traveling northbound on Jacksboro State Highway. As the Kia Soul approached the intersection of Jacksboro State Highway and the Hanger Cutoff Road, near Fort Worth, Texas, it was struck by another vehicle heading southbound on Hanger Cutoff Road.

49. As a result of the collision, the Kia Soul in which Mr. Sims was riding began to spin clockwise. The vehicle struck a signal light pole and later a "Yield" sign located at the intersection.

50. The vehicle caught fire after striking the "Yield" sign. Because the fuel tank had ruptured, flames quickly engulfed the vehicle. The two individuals riding in the front of the Kia Soul were able to escape with minor injuries. However, the three passengers riding in the

backseat, including Mr. Sims, were trapped in the vehicle and succumbed to the fire. All three passengers, including Mr. Sims, were pronounced dead at the scene.

VI. CAUSES OF ACTION – STRICT PRODUCTS LIABILITY

51. At all times relevant, Defendants KMA and/or KMC were involved in the design, manufacture, assembly, testing, marketing, sale, distribution and/or servicing of the Kia Soul, and its component parts, in which Mr. Sims was riding at the time of his death.

52. Defendants KMC and KMA were responsible for placing the 2010 Kia Soul into the stream of commerce in the State of California.

53. It was reasonably foreseeable to Defendants KMC and KMA that collisions similar to the one that claimed the life of Mr. Sims would occur during the normal and ordinary use of its vehicles, including the 2010 Kia Soul.

54. Whether a gas tank is designed and manufactured with appropriate safeguards is a material safety concern. Defendants KMA and KMC had a duty to disclose and warn of these material facts regarding potential defects in the Kia Soul's fuel system because they were known and/or readily accessible only to Defendants who have superior knowledge and access to the facts, and Defendants knew they were not known to or reasonably discoverable by Plaintiffs. These omitted facts were material because they directly impact the safety of the Kia Soul.

55. Defendants' concealment was done maliciously, oppressively, consciously and deliberately, with intent to defraud, and in reckless disregard of Plaintiffs' rights and well-being and in order to enrich Defendants. Defendants' conduct warrants an assessment of punitive damages in an amount sufficient to deter such conduct in the future, which amount is to be determined according to the proof adduced at trial.

56. The vehicle in which Mr. Sims was a passenger did not perform safely as an ordinary consumer of the 2010 Kia Soul would expect, despite the vehicle's use for its intended purpose.

57. The fuel system and/or safety features of the 2010 Kia Soul in which Mr. Sims was a passenger were defectively manufactured, designed, assembled, sold, marketed, engineered, distributed and/or tested.

58. The acts and/or omissions of Defendants KMA and KMC were a proximate cause of the death of Henry Sims, Sr.

59. The acts and/or omissions of Defendants KMA and KMC were a proximate cause of the Plaintiffs' damages, both individually and on behalf of the Estate of Henry Sims.

VII. CAUSE OF ACTION - NEGLIGENCE

60. At all times relevant, Defendants KMA and/or KMC were involved in the design, manufacture, assembly, testing, marketing, sale, distribution and/or servicing of the Kia Soul, and its component parts, in which Mr. Sims was riding at the time of his death.

61. At all times relevant, Defendants KMA and KMC owed Plaintiffs a duty to exercise reasonable care in the design, manufacture, marketing, sale, assembly, distribution and/or testing of the Kia Soul, and its component parts, including a duty to ensure that the vehicle did not cause Plaintiffs, other users, bystanders and/or members of the public, unnecessary injury or death.

62. It was reasonably foreseeable to Defendants that collisions similar to the one involving Mr. Sims would occur during the normal and ordinary use of its vehicles.

63. The injuries suffered by Plaintiffs occurred because the vehicle in which Mr. Sims was traveling was not reasonably crashworthy and/or not reasonably fit to safely withstand foreseeable collisions with other vehicles and/or with fixed objects.

64. Defendants KMA and KMC knew or should have known that the 2010 Kia Soul in which Mr. Sims was a passenger was unreasonably dangerous in the event it was involved in a collision like the one involving Mr. Sims, yet concealed that fact from Plaintiffs and the public. Consequently, Defendants KMA and KMC were negligent and breached their duty of care to Plaintiffs in the following ways:

a. Defendants KMA and KMC failed to exercise due care in the design, manufacture, assembly, marketing, sale, engineering, distribution and/or testing of the 2010 Kia Soul in order to avoid the types of injuries experienced by Plaintiffs;

b. Defendants KMA and KMC failed to incorporate within the 2010 Kia Soul reasonable safeguards to avoid catastrophic and uncontrollable fires resulting from collisions with other vehicles and/or fixed objects;

c. Defendants KMA and KMC failed to take adequate steps to identify and/or mitigate the safety risks, including the risks of catastrophic and uncontrollable fires resulting from collisions with other vehicles and/or fixed objects; and

d. Defendants KMA and KMC were otherwise careless or negligent in the design, manufacture, assembly, marketing, engineering and/or testing of the 2010 Kia Soul.

65. As a direct result of Defendants negligence, Plaintiffs suffered harm in an amount to be determined by a jury following trial.

VIII. CAUSE OF ACTION - BREACH OF IMPLIED WARRANTY OF MERCHANTABILITY

(CAL. COM. CODE § 2314)

66. Defendants are and were at all relevant times merchants with respect to motor vehicles under § 2104.

67. Prior to the death of Mr. Sims, Defendants KMA and KMC impliedly warranted to members of the general public, including Plaintiffs, that the 2010 Kia Soul was of merchantable quality.

68. Members of the general public, including Plaintiffs, were intended third-party beneficiaries of the implied warranty of merchantability.

69. Plaintiffs relied upon the skill and judgment of Defendants KMA and KMC in the purchase, selection, and/or use of the 2010 Kia Soul as a safe and reliable means for transportation.

70. The 2010 Kia Soul in which Mr. Sims was riding at the time of his death was not of merchantable quality as warranted by Defendants KMA and KMC, in that it was defectively designed, manufactured, marketed, sold, assembled, engineered, distributed and/or tested, thereby dangerously exposing the users and occupants to serious bodily injury.

71. After Plaintiffs suffered the injuries described herein, notice was given by Plaintiffs to Defendants KMA and KMC, by filing this lawsuit of the breach of said warranty.

72. As a direct and proximate result of the breach of said implied warranty, Plaintiffs sustained damages alleged herein in an amount to be proven at trial.

IX. CAUSE OF ACTION – WRONGFUL DEATH

73. As alleged throughout this Amended Complaint, Mr. Sims died as a result of the defect, negligence, wrongful conduct and/or statutory violations of Defendants KMA and KMC.

74. Plaintiffs are the heirs of Mr. Sims and have been harmed and suffered damages resulting from the acts and omissions of KMA and KMC.

75. Plaintiffs seek general and special damages in connection with the loss of: financial support, gifts, benefits, services and for the pain suffering, mental and physical anguish, loss of care, comfort, society, companionship, advice and friendship of Mr. Sims. Plaintiffs seek all damages permitted by law, including punitive damages, resulting from the wrongful death of Mr. Sims in an amount to be proven at the time of trial.

X. CAUSE OF ACTION - SURVIVAL

76. As alleged throughout this Amended Complaint, Mr. Sims died as a result of the defect, negligence, wrongful conduct and/or statutory violations of Defendants KMA and KMC.

77. Decedent, Mr. Sims, suffered damages of a personal and pecuniary nature prior to his death, including but not limited to, personal property damage, personal injury, conscious physical and mental pain and suffering, disability, disfigurement, as well as medical expenses

and loss of earnings. Had Mr. Sims survived, he would have been entitled to bring an action for damages and such right of action survives his death.

78. Plaintiffs, as natural children, or issue of deceased children, of Mr. Sims, as survivors claim the following related to the death of Mr. Sims: loss of services, pain, suffering, mental and physical anguish and agony suffered by the decedent prior to his death, loss of care, comfort, protection, companionship, society, advice and friendship, recovery for grief, mental anguish, emotional pain and suffering and distress, medical and/or burial expenses, loss of lifetime earnings of decedent, punitive damages and all other damages allowed by law.

XI. PRAYER FOR RELIEF

Wherefore, Plaintiffs request that the Court enter judgment against Defendants in the following fashion:

A. The full amount of Plaintiffs' economic damages;

B. The full amount of Plaintiffs' non-economic and/or general damages;

C. The full amount of damages suffered by the Estate of Henry Sims, Sr.;

D. Exemplary or punitive damages to the full extent allowed by law;

E. The full amount of Plaintiffs' damages for loss of consortium, society, companionship, advice, support guidance, or similar benefits, resulting from the wrongful death of Henry Sims, Sr.;

F. Plaintiffs' attorneys' fees and costs to the extent allowable;

G. Prejudgment interest on Plaintiffs' damages; and

H. Such other and further relief the Court deems just and proper.

XII. JURY DEMAND

Plaintiffs demand a trial by jury as provided by Federal Rule of Civil Procedure 38.

DATED: March 31, 2014

HAGENS BERMAN SOBOL SHAPIRO LLP

STEVE W. BERMAN (*pro hac vice*)
WASB No. 12536
steve@hbsslaw.com
MARTIN D. MCLEAN (*pro hac vice*)
WASB No. 33269
martym@hbsslaw.com
HAGENS BERMAN SOBOL SHAPIRO LLP
1918 Eighth Avenue, Suite 3300
Seattle, WA 98101
Telephone: (206) 623-7292
Facsimile: (206) 623-0594

MARC R. STANLEY
State Bar No. 19046500
marcstanley@mac.com
STANLEY LAW GROUP
3100 Monticello Ave, Suite 770
Dallas, TX 75205
Telephone: (214) 443-4301
Facsimile: (214) 443-0358
COUNSEL FOR PLAINTIFFS

B

Investigation of the Fire in the Matter of Sims vs. Kia

Investigation of the Fire in the Matter of Sims vs. Kia

Prepared for:

Cary Slobin and David Kelly
Bowman and Brooke, LLP
2501 N. Harwood Street, Suite 1700
Dallas, Texas 75201

Prepared by:

Jeff Colwell, Ph.D., P.E.
Colwell Consulting LLC
14614 North Kierland Boulevard
Suite 200
Scottsdale, Arizona 85254

March 2, 2015

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14009-2015-03-02-001

COLWELL CONSULTING

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Introduction

I was retained by Cary Slobin and David Kelly at Bowman and Brooke, LLP to investigate a postcollision vehicle fire that occurred on April 28, 2013 on Jacksboro State Highway near Fort Worth, Texas. The following describes my opinions in this matter to date.

Credentials and Bases for Opinions

I am a Principal Engineer with Colwell Consulting, where I specialize in the engineering analysis of thermal and combustion processes, with specific expertise and experience investigating the cause and origin of fires and explosions. I have a Bachelor of Science in Mechanical Engineering from the University of Wyoming, a Master of Science in Mechanical Engineering from Purdue University, a Master of Science in Engineering from Stanford University and a Doctor of Philosophy in Mechanical Engineering from Arizona State University. I am a registered Professional Mechanical Engineer in the states of Arizona (#31176) and California (#M32037). I also currently serve as a principal and voting member of the National Fire Protection Association (NFPA) Technical Committee on Recreational Vehicles, responsible for NFPA 1192 - Standard on Recreational Vehicles. I served as the Chairman of the Society of Automotive Engineers (SAE) Fire Safety Committee from 2007-2010, responsible for the peer review of papers involving motor vehicle fires submitted to the SAE World Congress. In a similar role, I am currently the Associate Editor of the SAE International Journal of Passenger Cars – Mechanical Systems, where I am responsible for the peer review process for papers involving motor vehicle fires. I have authored numerous technical papers related to motor vehicle fires, including the "Passenger Vehicle Fires" chapter in the National Fire Protection Association *Fire Protection Handbook.* I am the sole instructor of a 3-day course entitled "Fundamentals of Motor Vehicle Fire Investigation", which is taught through the Society of Automotive Engineers. Attached is a true and correct copy of my curriculum vitae. I am over 18 years of age.

My opinions in this matter are based upon:

1) My education, training, and experience.

2) My evaluation of case material, including photographs, fire department reports, expert reports and deposition transcripts.

3) Colwell Consulting's inspections which included:

   a. Subject vehicle on April 23, 2014, May 22, 2014, July 11, 2014 and October 2, 2014.

   b. X-ray imaging of an exemplar sending unit on October 1, 2014 and the subject fuel tank on February 24, 2015.

   c. Exemplar vehicle on June 10, 2014.

I reserve the right to amend or supplement these opinions should additional information become available. I also expect to have supplemental opinions after expert depositions provide additional detail on the allegations and the foundations upon which plaintiff's experts' opinions, as set forth in their expert reports, are based.

Materials Reviewed

The following materials were reviewed and considered in forming my opinions.

- Complaint for Damage – Demand for Jury Trial
- Plaintiffs' First Amended Complaint for Damages
- Order Granting Joint Motion to Modify Deadlines in Court's Order Setting Schedule and Providing Special Pretrial Instructions
- Defendant Kia Motors America, Inc.'s Responses to Plaintiffs' First Requests for Production
- Defendant Kia Motors America, Inc.'s First Set of Interrogatories to All Plaintiffs with Objections and Responses Thereto
- Defendant Kia Motors America, Inc.'s First Set of Interrogatories to Brence E. Sims, Individually, with Objections and Responses Thereto
- Defendant Kia Motors America, Inc.'s First Set of Interrogatories to Henry Lee Sims, Jr., Individually, with Objections and Responses Thereto
- Defendant Kia Motors America, Inc.'s First Set of Interrogatories to Kathlyn L. Sims, Individually, with Objections and Responses Thereto
- Defendant Kia Motors America, Inc.'s First Set of Interrogatories to Michael A. Sims, Individually, with Objections and Responses Thereto

- Defendant Kia Motors America, Inc.'s First Set of Interrogatories to Pamela R. Sims, Individually, with Objections and Responses Thereto
- Defendant Kia Motors America, Inc.'s First Set of Interrogatories to Sarah D. Sims, Individually, with Objections and Responses Thereto
- Defendant Kia Motors America, Inc.'s First Set of Interrogatories to Shamika R. Sims, Individually, with Objections and Responses Thereto
- Defendant Kia Motors America, Inc.'s First Set of Interrogatories to Timothy E. Sims, Individually, with Objections and Responses Thereto
- Defendant Kia Motors America, Inc.'s First Set of Interrogatories to Willie E. Sims, Individually, with Objections and Responses Thereto
- Defendant Kia Motors America, Inc.'s First Set of Interrogatories to Plaintiffs Henry Lee Sims, Jr., Timothy Everett Sims, Willie Earl Sims, Shameka Rae Sims, Kathlyn Lenetta Sims, Brence Eric Sims, Michael Andre Sims, Sarah Denise Sims, and Pamela Rachael Sims, Individually and as Legal Heirs to the Estate of Henry Lee Sims, Sr., with Objections and Answers
- Defendant Kia Motors America, Inc.'s First Requests for Production to Plaintiffs Henry Lee Sims, Jr., Timothy Everett Sims, Willie Earl Sims, Shameka Rae Sims, Kathlyn Lenetta Sims, Brence Eric Sims, Michael Andre Sims, Sarah Denise Sims, and Pamela Rachael Sims, as Legal Heirs to the Estate of Henry Lee Sims, Sr., with Objections and Answers
- Defendant Kia Motor Corporation's Responses to Plaintiff's First Requests for Production
- Defendant Kia Motors Corporation's First Set of Interrogatories to Plaintiffs Henry Lee Sims, Jr., Timothy Everett Sims, Willie Earl Sims, Shameka Rae Sims, Kathlyn Lenetta Sims, Brence Eric Sims, Michael Andre Sims, Sarah Denise Sims, and Pamela Rachael Sims, as Legal Heirs to the Estate of Henry Lee Sims, Sr., with Objections and Answers
- Defendant Kia Motors Corporation's First Set of Interrogatories to Plaintiff Brence E. Sims, Individually, with Objections and Answers
- Defendant Kia Motors Corporation's First Set of Interrogatories to Plaintiff Henry L. Sims, Individually, with Objections and Answers
- Defendant Kia Motors Corporation's First Set of Interrogatories to Plaintiff Kathlyn L. Sims, Individually, with Objections and Answers
- Defendant Kia Motors Corporation's First Set of Interrogatories to Plaintiff Michael A. Sims, Individually, with Objections and Answers
- Defendant Kia Motors Corporation's First Set of Interrogatories to Plaintiff Shameka R. Sims, Individually, with Objections and Answers
- Defendant Kia Motors Corporation's First Set of Interrogatories to Plaintiff Timothy E. Sims, Individually, with Objections and Answers
- Defendant Kia Motors Corporation's First Set of Interrogatories to Plaintiff Willie E. Sims, Individually, with Objections and Answers

- Defendant Kia Motors Corporation's First Set of Interrogatories to Plaintiff Pamela R. Sims, Individually, with Objections and Answers
- Allstate Insurance Company Records
- Azle Fire Department Records
- Fort Worth Fire Department Records
- Liberty Mutual Insurance Records
- Tarrant Co. Sheriff's Office Records
- Weather Report for April 28, 2013 - Fort Worth Naval Air Station
- Texas Peace Officer's Crash Report dated April 28, 2013
- Radio Ads (2011-2013)
- Kia Motor Company Crash Test Videos
- Kia Motor Company Fuel Tank Sled Test Videos
- Kia Motor Company Rough Road Test Videos
- Kia Motor Company Front and Rear Door Test Videos
- Kia Fuel Tank Videos
- Fort Worth Police Department 911 Audio
- Tarrant County Sheriff 911 Video
- Tarrant County Sheriff Unit Videos
- Henry Sims Photographs (scene, autopsy, and X-ray)
- Vehicle Information
    - KIA Motors Document Management Policy
    - Subject Vehicle MSRP and Commercial Invoice
    - Memorandum Invoice - KIA Motors America
    - Vehicle Warranty Information – Bates numbers KMA000238 to KMA000242
    - Kia Soul Marketing Brochures
    - 2012 Kia Soul Marketing Brochures
    - 2013 Kia Soul Marketing Brochure
    - Technical Service Bulletin - Subject Combined TSB/Service Action: Soul (AM) Fuel Filler Cap Replacement (SA 037)
    - Soul (AM) 2010 G 2.0 DOHC Engine Control/Fuel System Procedure pages
    - 2010 Kia Soul Service Manual
    - Initial Part Warranty
    - Inspection Reports (A) - dated 9/7/2012, 8/11/10, 6/30/11
    - Drawings and Standards
        - Vehicle Schematics
        - Engineering Standards
        - Engineering Standard for Spot Welding - Old Spec
        - Engineering Standard for Spot Welding - New Spec
        - Engineering Standard - Seam Welding for Fuel Tanks

Exhibit B-27

        - Fuel Tank Drawing
        - Fuel System Schematics & Specifications
        - Inspection Agreement – 1 – 3
        - Material Specifications
        - Fuel Tank Diagram and parts list
        - Engineering Orders
    - Test Procedures and Reports
        - Final Report on Rough Road and Abuse Testing of a Kia AM
        - FMVSS 201P Side Impact Test Dated December 19, 2008
        - FMVSS 208 Dated January 3, 2009
        - FMVSS 208 Dated January 6, 2009
        - FMVSS 208 Dated January 9, 2009
        - FMVSS 208 Dated January 10, 2009
        - FMVSS 208 Dated January 12, 2009
        - FMVSS 208 Dated September 9, 2008
        - FMVSS 208 Dated September 10, 2008
        - FMVSS 208 Dated November 11, 2008
        - FMVSS 208 Dated November 12, 2008
        - FMVSS 208 Dated November 24, 2008
        - FMVSS 208 Dated September 8, 2008
        - FMVSS 208 Dated June 3, 2010
        - FMVSS 301R Dated December 24, 2008
        - New Car Assessment Test 3/3/2010, 12/30/2008
        - Hyundai-Kia America Technical Center Report - KMC AM M1 #509 CPG Durability End of Test Report
        - Test and Development Procedure - Full Vehicle Laboratory Simulation Durability Test
        - Test and Development Procedure - Evaluate Function and Durability Deterioration
        - Test Report 177:013829 1 08 - Type 2 Automotive Seat Belt Assemblies dated August 20, 2008
        - Test Report 177:013828-1-08 - Type 2 Automotive Seat Belt Assemblies dated August 19, 2008
- Photographs
    - Jack Ridenour Exemplar Photographs of 2004 Rio Exemplar
    - Jack Ridenour Exemplar Photographs of 2011 Rio Exemplar
    - Jack Ridenour Exemplar Photographs of 2011 Soul Exemplar
    - Jack Ridenour Exemplar Photographs of 2013 Forte Exemplar
    - Jack Ridenour Vehicle Inspection Photographs dated May 22, 2014
    - Design Research Engineering Inspection dated September 19, 2014

- Mike McCort Photographs (scene and subject vehicle)
- Will Van Arsdell Vehicle Inspection Photographs dated May 21, 2014 & July 11, 2014
- Greg Smith Vehicle Inspection dated May 22, 2014
- Mike Klima of Design Research Engineering vehicle inspection photographs dated May 21 and 22, 2014
- Dr. Reinhart X-Ray inspection dated July 11, 2014
- Mike Hassan, El-Sabeh Vehicle Inspection dated November 21, 2013

- Depositions
  - Tracy Crouch dated August 22, 2014 with exhibits
  - John Goodman dated August 22, 2014 with exhibits
  - Chris Gorrie dated August 22 with exhibits
  - Jae Hwa Park dated April 10, 2014 with exhibits – Volume 1
  - Jae Hwa Park dated April 11, 2014 with exhibits – Volume 2
  - Brence Eric Sims dated April 21, 2014 with exhibits
  - Henry Lee Sims, Jr. dated April 21, 2014 with exhibits
  - Kathlyn Sims dated April 22, 2014with exhibits
  - Michael Andre Sims dated April 21, 2014 with exhibits
  - Pamela Sims Peyton dated April 22, 2014 with exhibits
  - Sarah Denise Sims dated April 21, 2014with exhibits
  - Shameka Sims dated April 22, 2014 with exhibits
  - Timothy Everett Sims dated April 22, 2014 with exhibits
  - Wilie Earl Sims dated April 22, 2014 with exhibits
- Expert Reports and Testing
  - Exponent Fuel Sending Unit Impact Test Report (9/26/14) – with photographs and video
  - Exponent Fuel Tank Impact Test – Kia Soul with Shielded Fuel Tank (2/25/15) – with photographs and video
  - Michael McCort Report dated January 30, 2015
  - Jerry Wallingford Report dated January 29, 2015
- Literature
  - Tewarson, A., Quintiere, J., and Purser, D., "Fire Behavior of Materials in Vehicle Crash Fires and Survivability of the Passengers," SAE Technical Paper 2005-01-1555, 2005, doi:10.4271/2005-01-1555.
  - Long, R.T., Colwell, J.D., Ray, R., Grossman, H.L., Thomas, B. and Strassburger, R. (2008) Passenger vehicle fires. In Cote, A.E. (Ed.), *Fire Protection Handbook*, 20th Edition. National Fire Protection Association, Quincy, MA, Vol. 2, Sect. 21, Chap. 1, pp. 21-3 – 21-14.
  - Drysdale, D. (2011) An Introduction to Fire Dynamics, 3rd Edition, John Wiley & Sons, West Sussex, UK, pg. 35-82.

- Quintiere, J. G. (1998) Principles of Fire Behavior, Delmar, Albany, NY, pg. 47-64.
- Colwell, J.D. (2013) Full-Scale Burn Test of a 2001 Full-Size Pickup Truck. *SAE Int. J. Trans. Safety* 1(2). Also in SAE Paper 2013-01-0214.

Background

On April 28, 2013 a 2010 Kia Soul traveling northwest on Jacksboro Highway collided with a Honda Odyssey traveling southbound on Hanger Cut Off Road at the intersection of the two roadways. The Kia Soul was being driven by Beverly Fuller and contained passengers: Alonda Harper (front passenger seat), Lillie Smith (passenger's side rear seat), Walter King Jr (center rear seat), and Henry Lee Sims (driver's side rear seat).[1] The Honda Odyssey was being driven by Kevin Davis and contained an additional front passenger, Benjamin Davis. The collision sequence began when the front of the Honda Odyssey struck the passenger side of the Kia Soul. During the course of the collision, the Kia Soul also struck a light pole, a "yield" sign, the fuel tank was damaged, and gasoline was released. A photograph of the Kia Soul at the fire scene is shown in Figure 1.

[1] Texas Peace Officer's Crash Report, case 13-41135

Exhibit B-30

Figure 1 Kia Soul at the fire scene with the intersection where the collision took place in the background.

After the Kia Soul came to rest, the driver, Beverly Fuller, noticed smoke immediately[2]. When she opened the door, flames were coming up from underneath the vehicle causing a "singe" sensation and she quickly closed the door.[3] She then pushed the door open with her left leg and jumped across the flames to get out of the vehicle.[4] After she exited the vehicle, she observed flames coming up and around the vehicle.[5] The front passenger, Alonda Harper, observed "fire all around the car" when the vehicle came to rest.[6] She also exited the vehicle through the driver's side front door and described flames outside the door and "jumping" through them.[7]

[2] Beverly Fuller deposition, pg. 54

[3] Beverly Fuller deposition, pg. 47

[4] Beverly Fuller deposition, pg. 55

[5] Beverly Fuller deposition, pg. 71

[6] Alonda Harper deposition, pg. 27-28

[7] Alonda Harper deposition, pg. 31

When the driver of the Honda Odyssey, Kevin Davis, first saw the Kia Soul after the collision, he observed flames coming from underneath it.[8] Mr. Davis arrived at the vehicle before Beverly Fuller and Alonda Harper had exited.[9] He stated that he called to them to get out of the vehicle and that because the driver's side front door would not open, they both crawled through the front, driver's side window.[10]

Tracy Crouch was one of the first bystanders to arrive at the intersection.[11] She directed traffic and remained about 30 yards away from the Kia. She reported that the driver and passenger of the Kia got out, shut the door and ran across the street. Later on, other people started trying to get the doors open.[12] Ultimately, the rear passengers did not exit the vehicle and sustained fatal injuries.

Postcollision Vehicle Fire Research

Postcollision fires, like the one that occurred on April 28, 2013 involving the 2010 Kia Soul operated by Beverly Fuller, have been the subject of significant, scientific research. Because this research provides important insight into understanding the fire that occurred on April 28, 2013, it will be briefly described below.

One of the most important research efforts associated with postcollision fire research was that conducted by General Motors (GM), the Motor Vehicle Fire Research Institute (MVFRI), and the National Highway Transportation Safety Administration.[13,14] In this research, 11 crash tests were conducted in a manner consistent with typical postcollision passenger vehicle fires. These crash tests were intended to be severe, providing substantial damage to the vehicle structure,

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[8] Kevin Davis deposition, pg. 14

[9] Kevin Davis deposition, pg. 15

[10] Kevin Davis deposition, pg. 16

[11] Tracy Crouch deposition, pg. 9

[12] Tracy Crouch deposition, pg. 13

[13] Tewarson, A., Quintiere, J., and Purser, D., "Fire Behavior of Materials in Vehicle Crash Fires and Survivability of the Passengers," SAE Technical Paper 2005-01-1555, 2005, doi:10.4271/2005-01-1555.

[14] Long, R.T., Colwell, J.D., Ray, R., Grossman, H.L., Thomas, B. and Strassburger, R. (2008) Passenger vehicle fires. In Cote, A.E. (Ed.), *Fire Protection Handbook*, 20th Edition. National Fire Protection Association, Quincy, MA, Vol. 2, Sect. 21, Chap. 1, pp. 21-3 – 21-14.

electrical systems, fluid systems, and the fuel tank. Crash test configurations included a moving deformable barrier, similar to the barrier used to assess compliance with the requirements of FMVSS 214, with the vehicle traveling at 53 mph (85 km/hr) for rear impacts, 65 mph (104.6 km/hr) for front impacts and at 34 mph (59.5 km/hr) for oblique barrier impacts (only one oblique test was conducted). The crash tests were performed with all normal engine fluids (except for the main fuel tank which was filled with Stoddard solvent for the crash test) with the engine running, and were heavily instrumented to attempt to capture the mechanism of ignition and propagation, should a fire occur. Once the crash tests were conducted, carefully controlled and heavily instrumented burn tests were performed in a manner consistent with the expected method of fire causation for each crash test. That data collected from the burn test were then used to calculate the point in time in which conditions would have become untenable for occupants within the passenger compartments.

One of the important findings from this research was that the times at which untenable conditions were reached was strongly correlated to the time that flames entered the passenger compartment. Regardless of how or where flames entered the passenger compartment, conditions became untenable in a matter of several minutes. In the case of pool fires (gasoline pool burning underneath the vehicle), flames from the pool fire underneath the vehicle penetrated into the passenger compartment through gaps around deformed doors or tears or separated underbody seams created by crash-induced damage. The time to reach untenable conditions ranged from 1.6 to 4.0 minutes. A summary of these results is shown in Table 1.

Pool fires (or fuel-fed fires) differ from other vehicle fires in that the power output of the initial fire is controlled not by the material flammability characteristics of the vehicle components but by the size of the fuel pool. Thus, strategies involving fire performance of materials and components inside the vehicle are not expected to have a significant effect on the outcome of a fuel-fed fire.

Table 1 Results of Postcollision, Fuel-Fed, Full-scale Vehicle Burn Tests

Test	Vehicle	Crash/Ignition	Flame Penetration (min)	Path	Lethal (min)
6	1997 Ford Explorer	Front crash, ignition of gasoline pool under the vehicle in the rear	2.1	Through openings in the floor pan and heat conduction through the floor pan	4.0*
2	1996 Plymouth Voyager	Rear crash; ignition of gasoline pool under the vehicle in the rear	2.0	Through split weld seams	3.5
3	1997 Chevrolet Camaro	Rear crash; ignition of gasoline pool under the vehicle in the rear	0.5	Through cash induced seam openings, gap between the driver's door and the door frame, the drain hole in the floor pan	3.5
5	1997 Ford Explorer	Rear crash, ignition of gasoline pool under the rear	2.1	Through crash induced seam openings, ignition of quarter trim panel by fire plume and heat conduction across the floor pan	3.7
7	1998 Honda Accord	Rear crash, ignition of gasoline pool under the vehicle in the rear	0.5	Through crash induced seam openings.	1.6*

*Test was extinguished before lethal conditions existed in the interior. The reported time is the time for the interior to reach flashover conditions.

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Exhibit B-34

Opinions

1. Gasoline was released from the fuel tank of the Kia Soul during the course of the collision. This gasoline was ignited and began to burn underneath the vehicle.

2. There were numerous, possible, collision-induced paths for fire spread into the interior.

    a. An overview of the collision-induced damage to the passenger's side of the Kia Soul is shown in Figure 2. This damage was primarily due to the collision with the front portion of the Honda Odyssey. For reference, the passenger side of an undamaged, exemplar Kia Soul is shown in Figure 3.

        i. When the front of the Honda Odyssey contacted the passenger's side of the Kia Soul, the front bumper penetrated through the front, passenger's side door of the Kia Soul, as shown in Figure 2. This hole in the passenger's side door provided a possible path for fire spread into the interior.

        ii. The collision with the Honda Odyssey also damaged the rear passenger door as shown in Figure 2 and Figure 4. This damage also provided possible paths for fire spread into the interior.

    b. An overview of damage sustained to the driver's side of the Kia Soul is shown in Figure 5. For reference, a similar view of an undamaged exemplar vehicle is shown in Figure 6.

        i. The collision with the light pole caused damage to the rear hatch, as shown in Figure 5. This damage provided a possible path for fire spread into the interior.

        ii. The collision with the light pole also resulted in tearing of the driver's side, rear quarter panel as shown in Figure 7. In this figure, a blue cloth has been placed on the outside of the vehicle at the location where the

tear in the body panel occurred. Portions of the blue cloth can be seen from the interior (rear cargo area) through the tear.

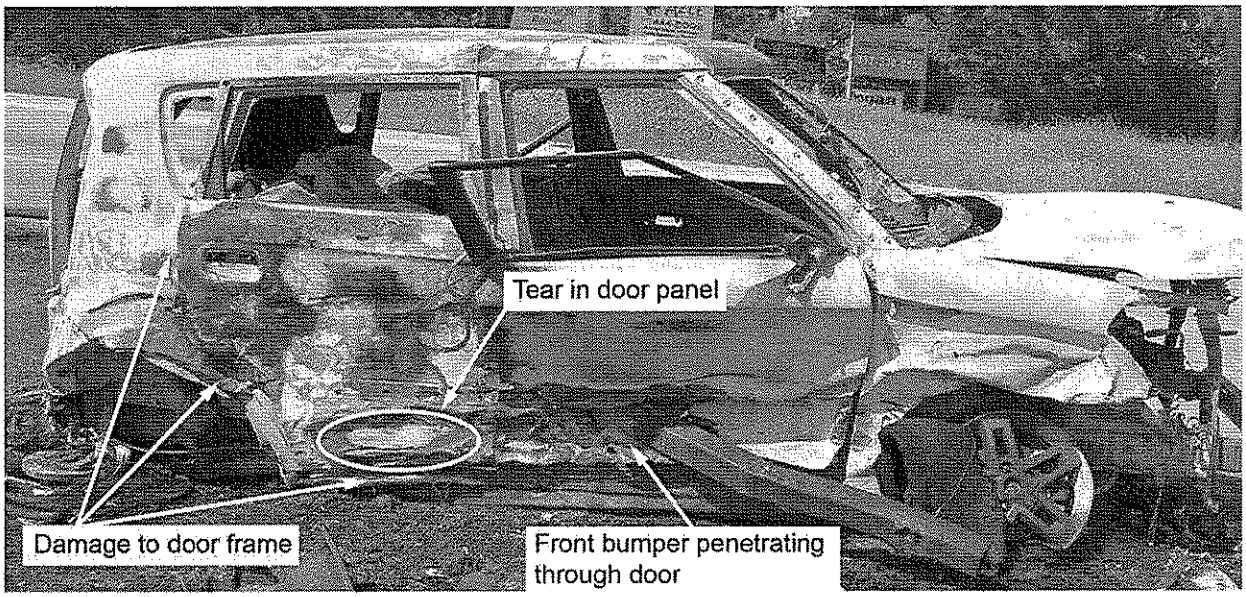

Figure 2 Overview of collision damage to passenger's side of the vehicle.

Figure 3 Passenger's side of an exemplar Kia Soul.

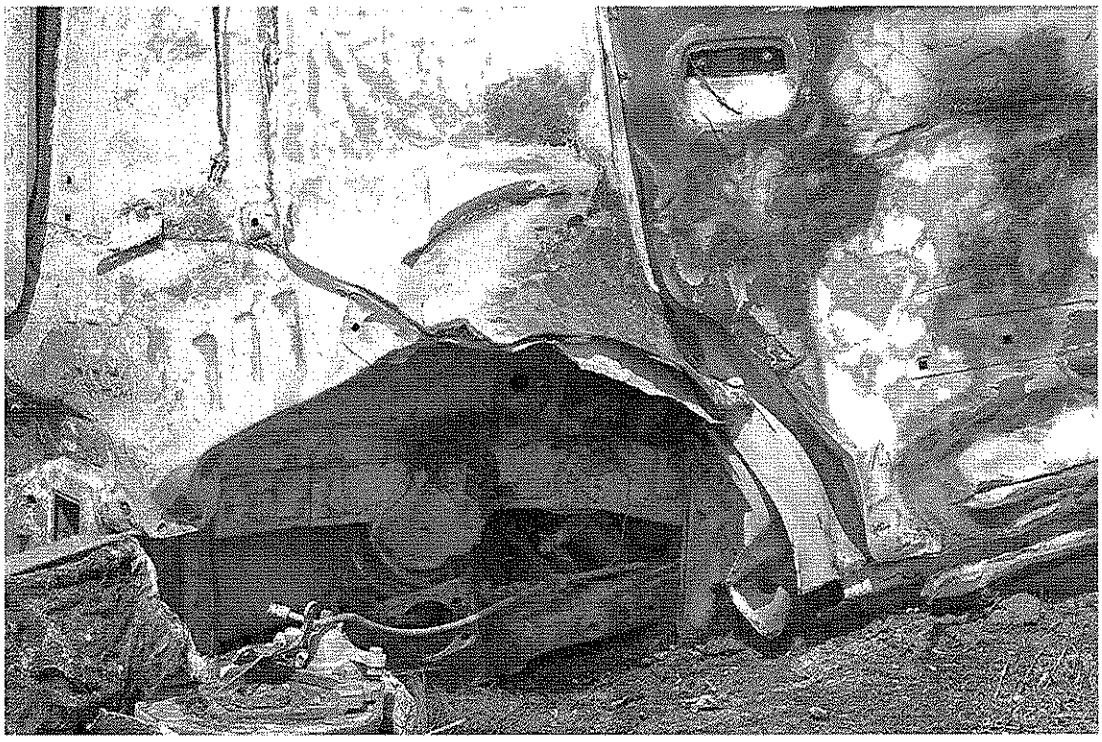

Figure 4 Close-up view of damage to the passenger's side rear door.

Exhibit B-37

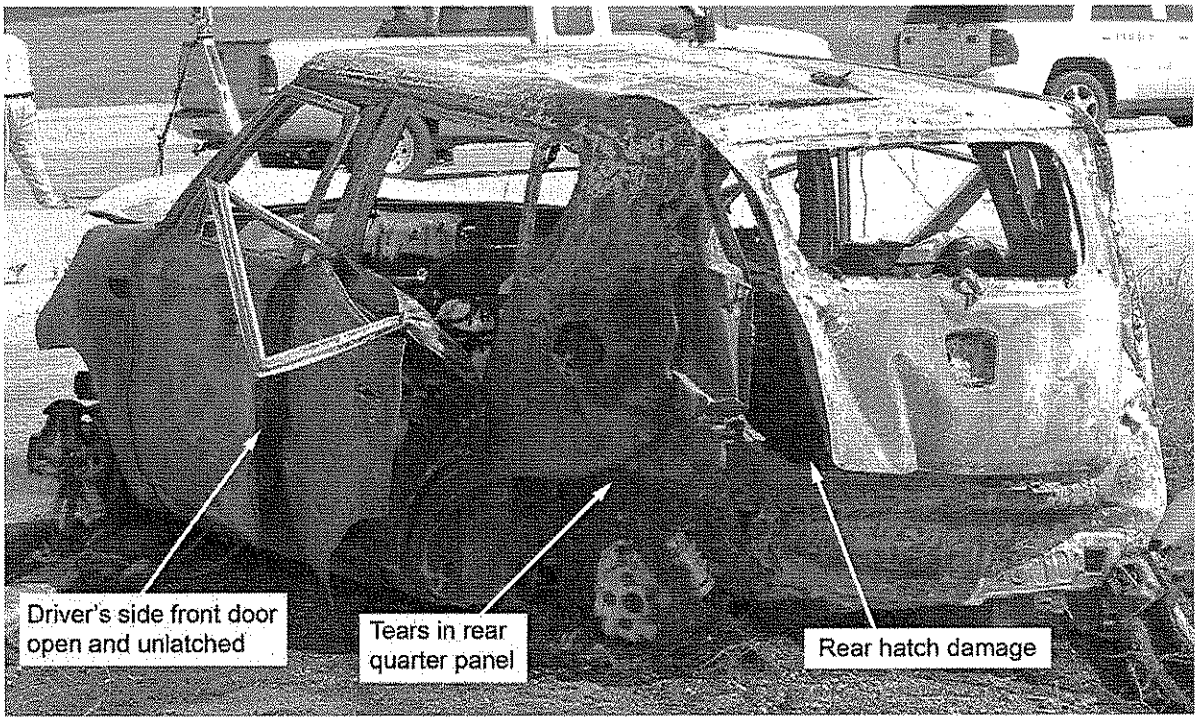

Figure 5 Overview of collision damage to the driver's side and the partially open driver's front door.

Figure 6 Driver's side rear quarter panel of an exemplar Kia Soul.

5. The outcome of the fire would have been no different if the polymer fuel tank access cover were instead made of steel.

    a. As described above, the first location in which the fire spread into the interior of the vehicle was through collision induced openings or through the open, or partially open, driver's side front door, or some combination of the two. Once fire spreads into the interior, the fire becomes untenable shortly thereafter. As a result, the outcome of the fire would have been the same if the fuel tank access cover were made of steel.

6. There are no recalls associated with this vehicle which played a role in this fire.

Response to Jerry Wallingford's Opinions

Mr. Wallingford opines in his report dated January 29, 2015 that "The polymer service cover located under the rear seat of the subject 2010 Kia Soul allowed fire to enter the occupant compartment within a short period of time."[15] Mr. Wallingford goes on to state that "Had Kia used a metallic fuel tank service cover on the 2010 Kia Soul it would have effectively withstood the vehicle fire, meaning the fire would not have intruded beneath (sic) rear seat where Mr. Sims was seated. Therefore, the use of a polymer fuel tank service cover on the 2010 Kia Soul contributed, at least in part, to the injuries sustained by Mr. Sims."[16]

1. Mr. Wallingford's opinion that the fire first spread into the interior through the fuel tank access cover is incorrect and ignores numerous, direct paths for fire spread into the interior.

    a. There is no barrier for fire spread into the interior through the open, front, driver's side door or collision-induced openings. These openings allow heat from the fire underneath the vehicle to directly and immediately interact with interior components such as carpet, trim and seat material. As a result, it was

[15] Wallingford report, pg. 11

[16] Wallingford report, pg. 31

through these paths that flames first spread into the interior. As described in the summary of postcollision fire research above, once flames spread into the interior, the passenger compartment becomes untenable shortly thereafter.

b. While numerous, direct paths are available for fire spread into the interior, the path through the fuel tank access port involves numerous barriers. These barriers include the top of the sending unit, shown in Figure 8, the fuel tank access port cover and the rear seat cushion, as shown in Figure 9.

    i. As described in Opinion 4 and Opinion 5 below, the top portion of the sending unit likely survived the collision intact such that it acted as a barrier to fire spread.

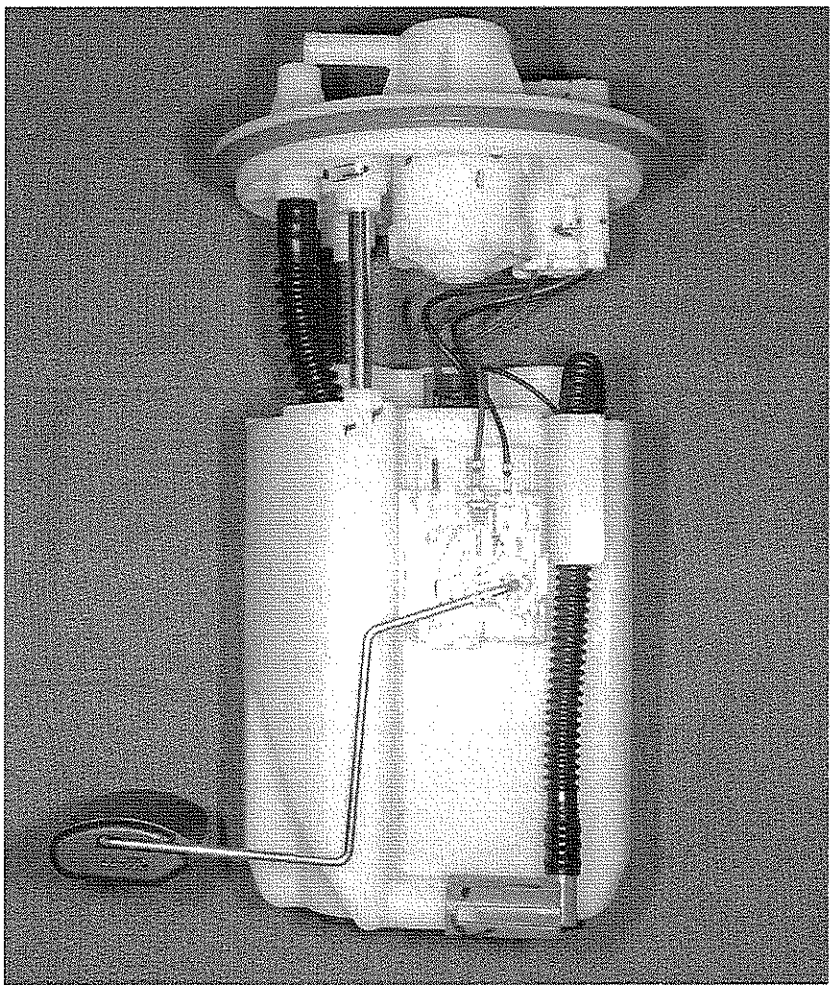

Figure 8 Exemplar sending unit located within the fuel tank.

Exhibit B-41

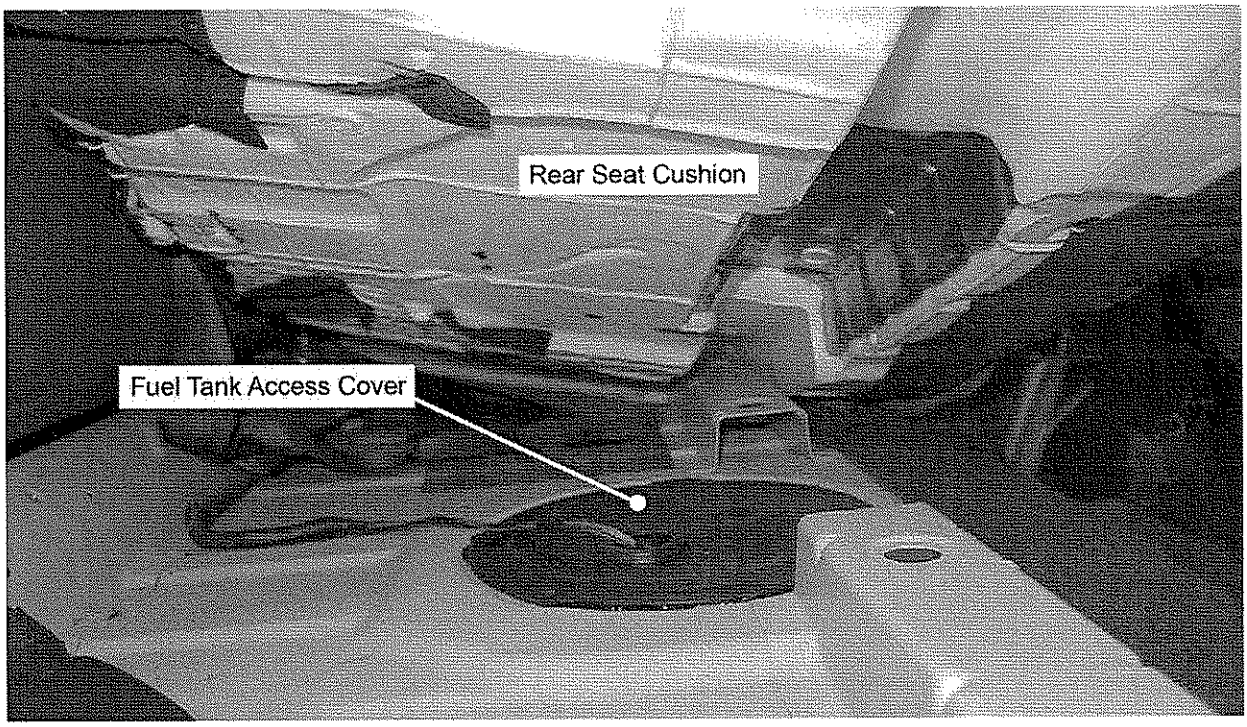

Figure 9 Fuel tank access cover and rear seat cushion in an exemplar vehicle.

2. Had the fire penetrated the fuel tank access cover early in the fire, as Mr. Wallingford has opined, it would have also penetrated the top of the sending unit which is located in very close proximity to the fuel tank access cover. However, the vehicle burn patterns do not support this fire spread scenario.

    a. The sending unit within the fuel tank suffered relatively little burn damage. As shown in Figure 10, the plastic portions of the sending unit were not consumed by the fire and numerous wires still have intact insulation present. In fact, the sending unit suffered less burn damage than any other component on the vehicle. The location of the sending unit within the subject fuel tank is shown in Figure 11.

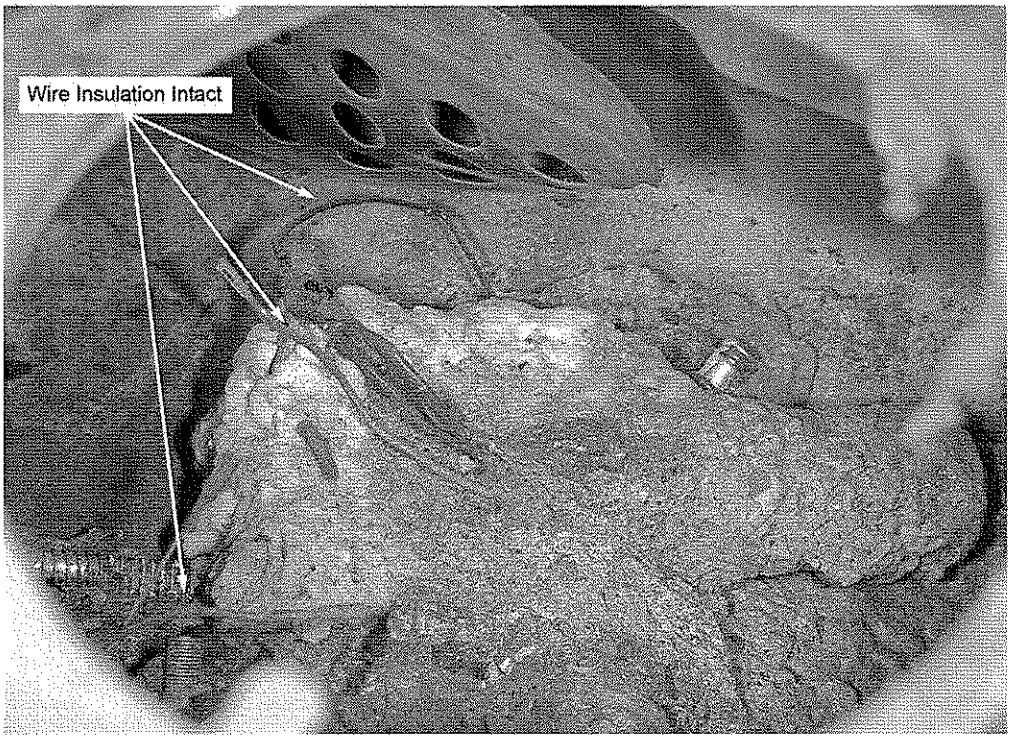

Figure 10 Remains of the sending unit within the fuel tank.

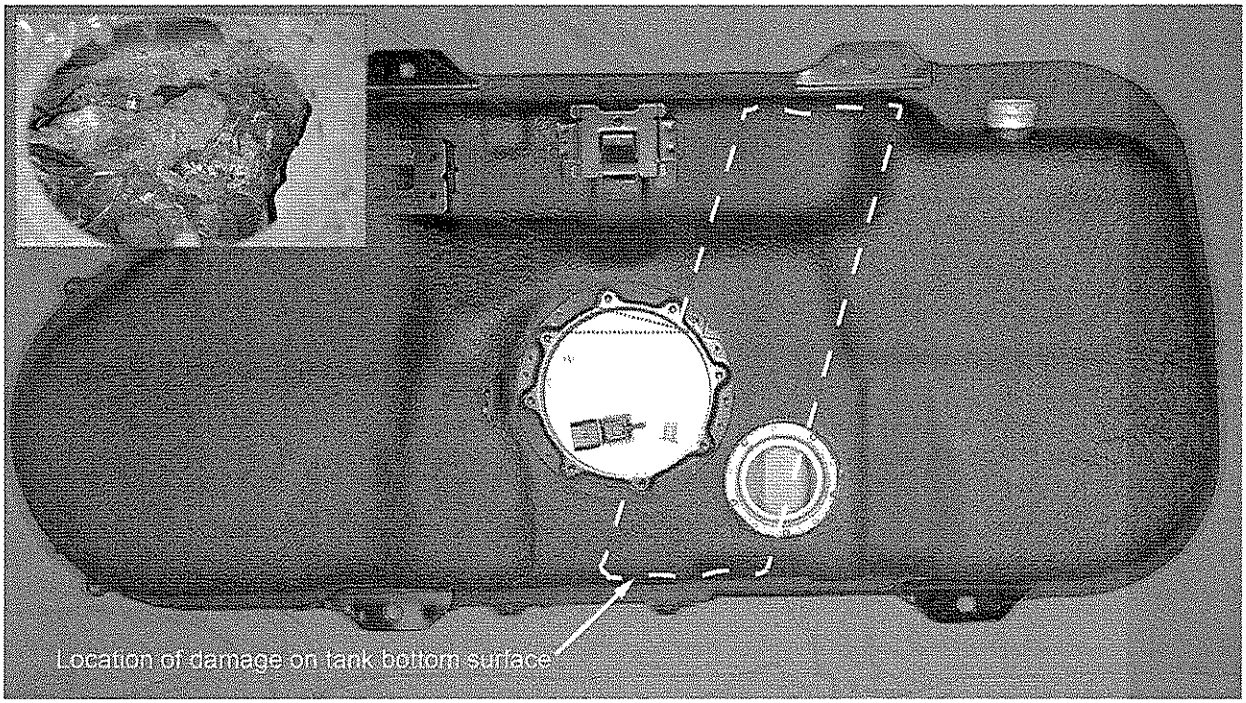

Figure 11 Top view of an exemplar fuel tank with the location of the subject sending unit remains superimposed on top.

Exhibit B-43

3. The minimal thermal damage to the sending unit is likely the result of little, direct radiation exchange between the underbody fire and the sending unit.

    a. Thermal radiation emitted from a flame becomes the dominant mode of heat transfer once the diameter of the fuel bed increases beyond about 0.3 m.[17] Full-scale vehicle tests have also illustrated the importance of radiation heat transfer.[18] Because thermal radiation involves the transfer of energy by electromagnetic waves, the two surfaces exchanging radiation must have a direct line of sight with each other in order to exchange thermal radiation. The fraction of radiation emitted by one surface and incident on a second surface is called the configuration factor.[17,19]

    b. Grass adhered to the bottom of the fuel tank, shown in Figure 12, indicates that it was in contact with the ground during the fire. As a result, the configuration factor from the thermal radiation produced by the underbody fire to the sending unit was low resulting in little thermal radiation heat transfer to the sending unit. The steel shell of the fuel tank acted as a radiation shield which protected the sending unit.

    c. Similarly, the view factor from the thermal radiation produced by the underbody fire to the fuel tank access cover was also low resulting in little thermal radiation heat transfer to the fuel tank access cover.

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[17] Drysdale, D. (2011) An Introduction to Fire Dynamics, 3rd Edition, John Wiley & Sons, West Sussex, UK, pg. 35-82.
[18] Colwell, J.D. (2013) Full-Scale Burn Test of a 2001 Full-Size Pickup Truck. *SAE Int. J. Trans. Safety* 1(2). Also in SAE Paper 2013-01-0214.
[19] Quintiere, J. G. (1998) Principles of Fire Behavior, Delmar, Albany, NY, pg. 47-64.

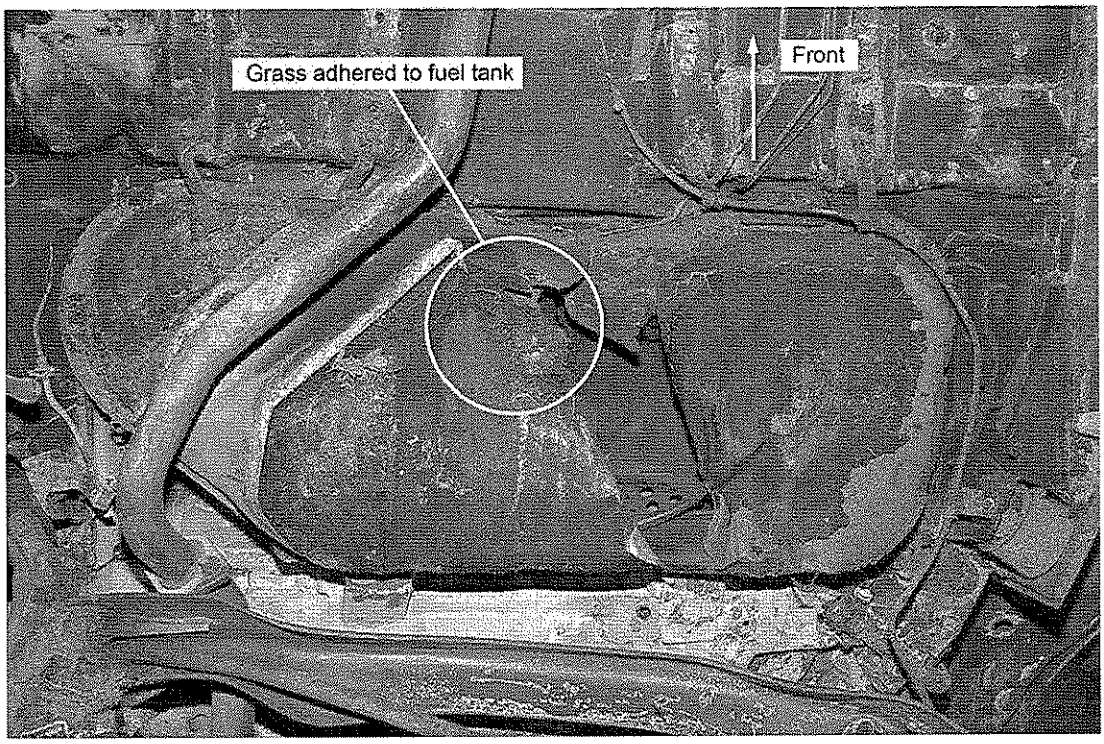

Figure 12 Location of grass adhered to the bottom of the fuel tank.

4. The upper portion of the sending unit likely remained intact and provided a barrier to fire penetration into the interior in spite of contact between the bottom portion of the sending unit and the yield sign pipe flange.

    a. As the pipe flange from the yield sign passed through the bottom portion of the fuel tank, it would have also contacted the lower part of the sending unit. The approximate path of the pipe flange through the bottom portion of the tank relative to the location of the sending unit is shown in Figure 11.

    b. On September 26, 2014, Exponent conducted testing to evaluate the damage sustained to an exemplar sending unit mounted in an exemplar fuel tank when it contacts a pipe flange under circumstances similar to that in the subject incident.[20]

[20] Exponent (2014) "Fuel Sending Unit Impact Test, 2010 Kia Soul", September 26, 2014, Phoenix, Arizona

Exhibit B-45

c. Results of the testing illustrated that while the lower part of the sending unit was cracked, it remained in place, as shown in Figure 13. Furthermore, the top portion of the sending unit remained attached to the tank and would have acted as a barrier to fire spread.

d. Additional testing conducted by Exponent on a shielded fuel tank on February 25, 2015 produced similar results. When an exemplar sending unit mounted in a shielded fuel tank contacted a pipe flange under circumstances similar to that in the subject incident, the top portion of the sending unit remained attached to the tank and would have acted as a barrier to fire spread. Additionally, the lower part of the sending unit also remained within the fuel tank.[21]

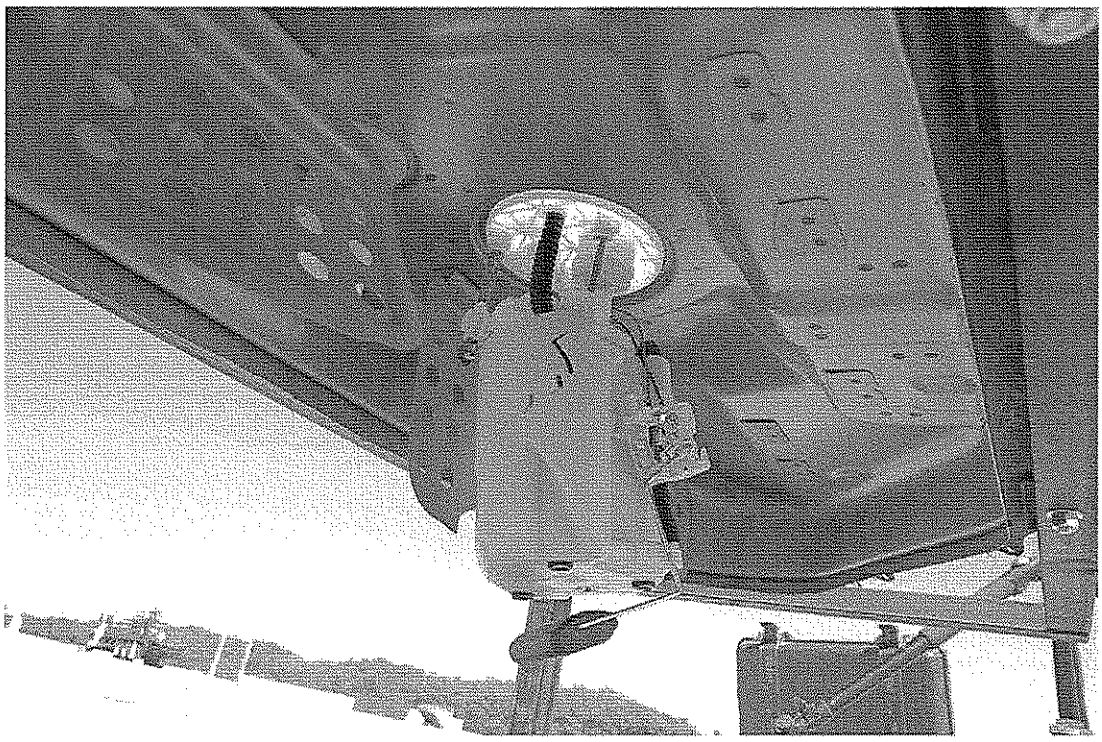

Figure 13 Post-test photograph of damage to sending unit after contact with the pipe flange – from Exponent September 26, 2014 testing.

[21] Exponent (2015) "Fuel Tank Impact Test – Kia Soul with Shielded Fuel Tank", February 25, 2015, Phoenix, Arizona.

5. X-ray images of the subject fuel tank show that components of both the upper and lower portions of the sending unit were in the fuel tank at the time of the fire.

    a. A comparison of X-ray images of an exemplar sending unit and the subject fuel tank illustrates that components from both the lower and upper part of the sending unit are present in the melted plastic remains of the fuel tank.

        i. As shown in Figure 14, the sending unit motor is clearly visible in the subject fuel tank.

    b. Also shown in Figure 14 is a connector from the top portion of the sending unit. Figure 15 shows both a photograph and an X-ray image of this connector. Also shown in Figure 15 is the connector from the subject fuel tank.

    c. The location of the connector from the top portion on the sending unit in the fuel tank is consistent with it dropping into the fuel tank during the course of the fire.

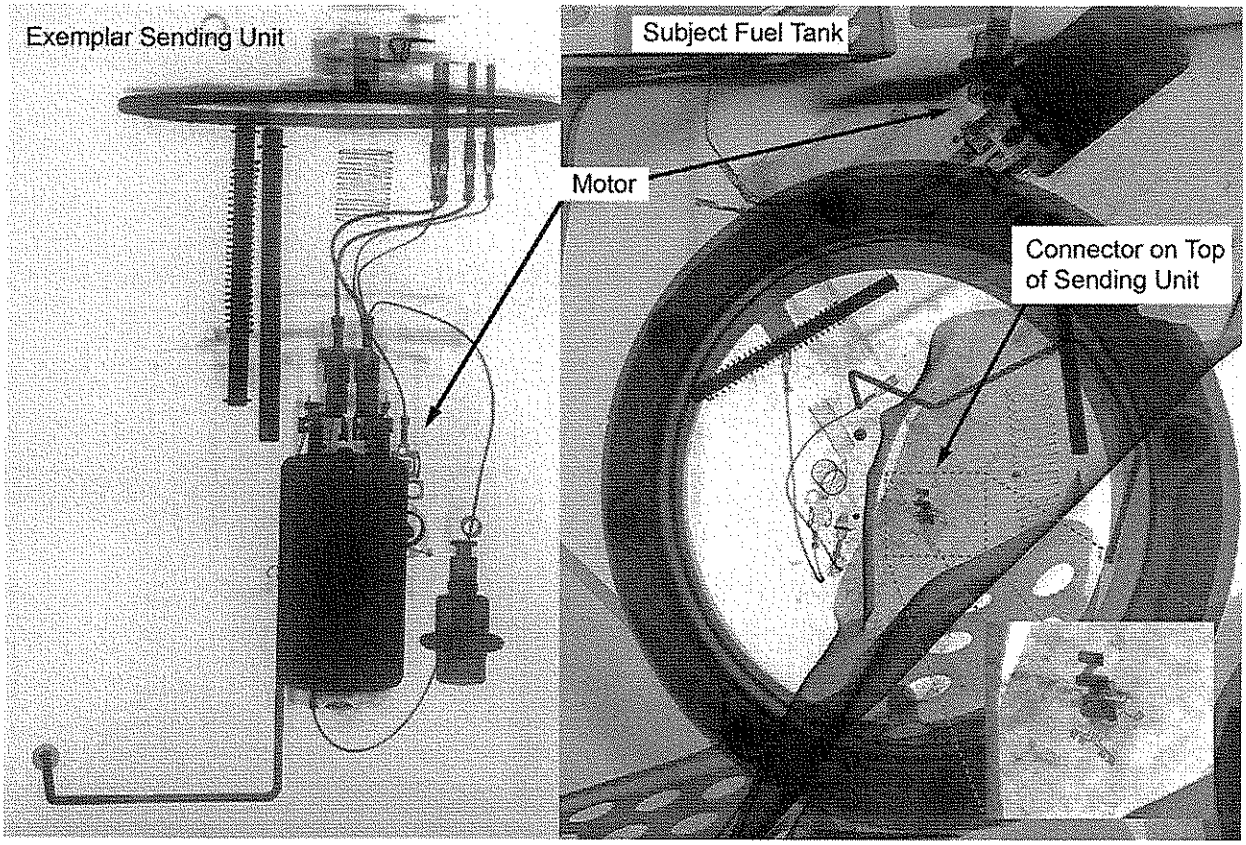

Figure 14 Comparison of X-ray images from an exemplar sending unit (left) and the subject fuel tank (right).

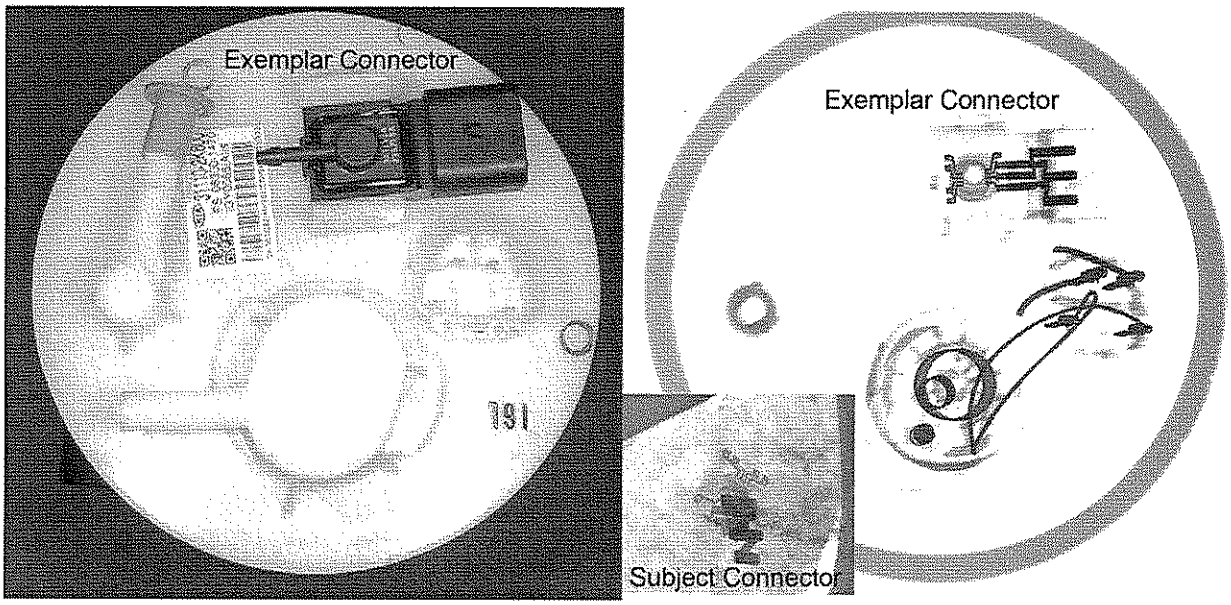

Figure 15 Comparison of a photograph of the top of the sending unit (left) with an X-ray image of the top of the sending unit (right) to the connector found in the subject fuel tank, see Figure 14.

6. Mr. Wallingford has provided no basis for his opinion that the fire first spread through the fuel tank access cover. Mr. Wallingford has not cited any scientific literature, conducted any testing or performed any sort of analysis which supports his opinion. His opinion concerning fire spread into the interior of the vehicle is speculative and without merit.

Summary

On April 28, 2013 a traffic accident occurred where the front of a Honda Odyssey operated by Kevin Davis struck the passenger's side of a 2010 Kia Soul operated by Beverly Fuller. During the course of the collision, gasoline was released from the fuel tank and began to burn underneath the vehicle. While both front seat passengers were able to exit the vehicle, the rear passengers did not and suffered fatal injuries.

The fire first spread from underneath the vehicle to the interior through either the open, front, driver's side door or numerous locations of collision-induced damage to the vehicle, or both. This mechanism of fire spread is consistent with the mechanism observed in significant postcollision fire research. This research indicates that once the flames spread to the passenger compartment, it becomes untenable shortly thereafter.

Mr. Wallingford has opined that the fire first spread from underneath the vehicle into the interior through the fuel tank access cover. However, Mr. Wallingford failed to consider, or even describe in his report, numerous other possible paths for fire spread into the interior. In Mr. Wallingford's scenario, the fire spread involves penetrating numerous barriers including the top of the sending unit, the fuel tank access cover, and the rear seat cushion. However, heat from the fire underneath the vehicle can directly and immediately interact with interior components such as carpet, trim and seat material through the open, driver's side front door or numerous locations of collision-induced damage. Furthermore, Mr. Wallingford's scenario is inconsistent with the physical evidence. The sending unit within the fuel tank, which is located several inches away from the fuel tank access cover, is the least damaged component in the vehicle. In fact, intact wire insulation in still present. This relatively minor burn damage is

consistent with this location being one of the last areas of the vehicle involved in the fire, not one of the first as opined by Mr. Wallingford.

Exhibit B-50